

IN THE CLAIMS:

Please amend the claims as follows:

1. (currently amended) A method for acquiring ultrasound data for display, the method comprising:

- (a) scanning just along a two-dimensional plane over a first lateral range with ultrasound, the scanning being in a two-dimensional scan format;
- (b) scanning a three-dimensional volume over a second lateral range with ultrasound, the second lateral range being a largest lateral range of the scanning of the three-dimensional volume and being less than the first lateral range within the two-dimensional plane;

wherein (a) and (b) are interleaved at least in part;

- (c) generating a two-dimensional image as a function of (a); and
- (d) generating a three-dimensional representation as a function of (b), a lateral extent represented on a display of the two-dimensional image being greater than lateral extent represented by the three-dimensional representation;

wherein (c) comprises generating a two-dimensional B-mode image as a function of (a), and wherein (d) comprises generating a three-dimensional Doppler representation as a function of (b), the two-dimensional B-mode image displayed as a single plane intersecting the three-dimensional Doppler representation.

2. (original) The method of Claim 1 wherein (a) comprises scanning over a first scan angle range and (b) comprises scanning over a second scan angle range.

3. (original) The method of Claim 2 wherein (a) comprises scanning over an about 90 degree sector or Vector® region.

4. (original) The method of Claim 1 wherein (b) comprises scanning the three-dimensional volume over a third lateral range perpendicular to the two-dimensional plane, the third lateral range being less than the first lateral range.
5. (cancelled)
6. (cancelled)
7. (previously presented) The method of Claim 1 further comprising:
setting the second lateral range as a function of user input.
8. (original) The method of Claim 1 wherein (a) comprises scanning in response to a first imaging parameter in addition to the first lateral range, and (b) comprises scanning in response to a second imaging parameter in addition to the second lateral range, the first and second imaging parameters being a same type of parameter with different values.
9. (previously presented) The method of Claim 8 wherein the first and second imaging parameters comprise center frequency, bandwidth, aperture, apodization, scan geometry, scan line density or combinations thereof, and wherein the first and second imaging are different.
10. (original) The method of Claim 1 wherein (a) comprises scanning with a higher spatial resolution than (b).
11. (currently amended) A system for acquiring ultrasound data for display, the system comprising:
 - a transducer;
 - a beamformer connected with the transducer, the beamformer configured to interleave a scan along just a two-dimensional plane over a first lateral range and a scan of a three-dimensional volume over a second lateral range, the second lateral range being a largest

lateral range of the scan of the three-dimensional volume and being less than the first lateral range within the two-dimensional plane; and

a display connected with the beamformer, the display configured to generate a two-dimensional image as a function of the scan over the first lateral range and to generate a three-dimensional representation as a function of the scan over the second lateral range, a lateral extent represented on a display of the two-dimensional image being greater than represented by the three-dimensional representation, the two-dimensional image displayed as a single plane intersecting the three-dimensional representation.

12. (currently amended) The system of Claim 11 wherein the beamformer is ~~configure~~ configured to scan over a first scan angle range as the first lateral range and scan over a second scan angle range as the second lateral range.

13. (cancelled)

14. (previously presented) The system of Claim 11 wherein the two-dimensional image comprises a B-mode image and the three-dimensional representation comprises a Color Doppler image.

15. (original) The system of Claim 11 further comprising:
a user input, the second lateral range being a function of data from the user input.

16. (original) The system of Claim 11 wherein the beamformer is operable to scan an outer region of the two-dimensional plane with a higher resolution than the scan of the three-dimensional volume.

17. (original) The system of Claim 11 further comprising a user input, the steering angle of the three-dimensional volume being a function of data from the user input.

18. (currently amended) A method for acquiring ultrasound data for display, the method comprising:

(a) scanning within a three-dimensional volume with a first spatial resolution;
[[and]]

(b) scanning within a three-dimensional sub-volume of the volume with a second spatial resolution, the second spatial resolution higher than the first spatial resolution;
wherein (a) and (b) are acquired within a same imaging session;

(c) generating a first three-dimensional representation as a function of (a); and

(d) generating a second three-dimensional representation as a function of (b), the second three-dimensional having a higher spatial resolution than and formed separately from the first three-dimensional representation.

19. (original) The method of Claim 18 wherein (b) comprises scanning within the entire three-dimensional sub-volume at the second spatial resolution and (a) comprises scanning at the first spatial resolution within the entire three-dimensional volume other than the sub-volume.

20. (previously presented) The method of Claim 18 wherein (a) comprises scanning over a first lateral range and (b) comprises scanning over a second lateral range, the second lateral range being a largest lateral range of the scan of the three-dimensional volume and being less than the first lateral range along at least one dimension.

21. (original) The method of Claim 20 wherein the sub-volume has lesser lateral range along three dimensions than the volume.

22. (original) The method of Claim 20 wherein (a) comprises scanning over a first range of scan angles and (b) comprises scanning over a second range of scan angles, the second range less than the first range.

23. (cancelled)

24. (previously presented) The method of Claim 18 further comprising:
setting the sub-volume size as a function of user input.
25. (original) The method of Claim 18 wherein (a) comprises scanning with one of:
center frequency, bandwidth, aperture, apodization, scan geometry, scan line density and
combinations thereof different than for (b).
26. (cancelled)
27. (currently amended) A system for acquiring ultrasound data for display, the system
comprising:
a transducer;
a beamformer connected with the transducer, the beamformer operable to interleave a
scan within a three-dimensional volume with a first spatial resolution and a scan within a
three-dimensional sub-volume of the volume with a second spatial resolution, the second
spatial resolution higher than the first spatial resolution; and
a display connected with the beamformer, the display configured to generate a first
three-dimensional representation with data at the first spatial resolution and generate a
second three-dimensional representation with data at the second spatial resolution, the second
three-dimensional representation having a higher spatial resolution than and formed
separately from the first three-dimensional representation.
28. (original) The system of Claim 27 further comprising:
a user input, the beamformer responsive to data from the user input indicating one of
a size and position of the sub-volume relative to the volume.
29. (original) The system of Claim 27 wherein the beamformer is operable to scan at the
first and second spatial resolutions in response to different values for at least one of: center
frequency, bandwidth, aperture, apodization, scan geometry and scan line density.